

NOTES AND NEWS.

THE SYLLOGE FUNGORUM by Prof. P. A. Saccardo is to be continued. Volume IX is now in preparation.

THE PLANT INDIVIDUAL in the light of evolution is the title of a paper by Prof. L. H. Bailey, read before the Biological Society of Washington on Jan. 12th.

THE MICROSCOPICAL BULLETIN will be issued by Queen & Co. for the present year as heretofore. It appears bimonthly, at the subscription price of 25 cents a year, and contains many good things for workers with the microscope.

THE MARCH NUMBER of the *American Microscopical Journal* is of special interest to botanists, inasmuch as it contains a good portrait of Dr. Samuel Lockwood, so well known among the botanical fraternity, and also an artificial key to the genera of lichens, prepared by Mr. L. A. Willson.

IF THOSE who use live marine algæ in their courses of instruction will indicate to the Cambridge Botanical Supply Co. the time of year when they need such specimens the Company propose to prepare and issue a schedule of shipments. These have been successfully made as far west as Nebraska.

THE SUMMER SCHOOL at the University of Wisconsin offers botanical instruction by Professor Barnes, Dr. R. H. True, and Mr. F. D. Heald. Courses in general morphology and experimental physiology, and special work for advanced students are offered. The school begins July 8th and closes August 16th.

IN THE summer school of Cornell University, July 8th–August 16th, botany will be in charge of Prof. Rowlee. Courses are offered in systematic botany and histology; also a "general course" consisting of lectures upon the natural groups of plants accompanied by appropriate studies in the field and laboratory.

A SUMMER SCHOOL of cryptogamic botany will be held in the laboratory of the Cambridge Botanical Supply Co., Cambridge, Mass., beginning July 5, 1895, and continuing five weeks. Laboratory work and lectures will embrace courses in general cryptogamic botany for teachers, covering recommendations of "Committee of Ten," and economic mycology for investigators, with special attention to culture methods and literature.

DR. HARVEY W. WILEY has just published an account, with plates, of the culture, properties and uses of the "sweet cassava" (*Janipha Manihot*) of southern Florida and tropical America. It seems to be an exceedingly valuable human and cattle food, yielding a large amount of easily separated starch, and well suited to cultivation in the southern portions of the Gulf states. The publication is Bulletin 44 of the Division of Chemistry, U. S. Department of Agriculture.

THE METHODS AND AIMS of the horticultural department of Cornell University are set forth with some detail in an interesting article in the *American Florist* (10: 557. 12 Ja 1895) by Mr. Michael Barker. While the methods pursued are strictly scientific and the results often of great interest to botanists, the primary design of the work is to develop the knowledge and practice of horticulture.

THE PROCEEDINGS of the Davenport Academy of Sciences (6: part I) contains an excellent portrait of Dr. C. C. Parry, and also a biographical sketch by Dr. C. H. Preston. Mrs. Parry also furnishes a complete list of titles, the number of which is much larger than botanists will expect, as Dr. Parry's writings were scattered through numerous publications.

PROFESSOR E. L. GREENE publishes a new Californian *Ceanothus* in the *Kew Bulletin* for January. The sheet of type specimens is at Kew and seems to be unique. The plants were collected long since by Lobb, probably in the Coast Range. It has probably been confused with *C. divaricatus*, but its white-glaucous branches and branchlets distinguish it, along with other characters, and suggest the specific name *leucodermis*.

AN EMERGENCY POSTER, in relation to Russian thistle, printed on a sheet 20 by 24 inches, has been sent out by the Ohio Experiment Station as a supplement to Bulletin 55, to warn farmers and acquaint them with the appearance of the much dreaded weed. Good illustrations and brief description of the weed make it easy to be recognized by every one. This method of displaying posters throughout the state, if it can be properly done, must be a rapid way to acquaint a large section of country with new facts of moment.

BOTANICAL WORK at the Department of Agriculture is developing rapidly in the number of separate organizations and is increasing in scope. The Division of Vegetable Pathology has had Physiology added to its title, an enlargement of name to cover physiological work which has been going on for some time. The Division of Grasses and Forage Plants has been newly organized, cut off from the old Division of Botany. These two Divisions, with those of Botany and Forestry, constitute a broad range of botanical investigation, and should yield large results.

A WELCOME DEPARTURE for biologists will be the division of the subject matter of the journal, *Centralblatt für Bakteriologie und Parasitenkunde*, into two separately issued parts, beginning with the present year. The first part will contain medical bacteriology and animal parasites, and the second part general, technical and agricultural bacteriology and plant diseases. It will be a saving of much labor and a great convenience to have the non-pathological portion of bacteriology free from the overshadowing and bulky pathological part, for which biologists especially will doubtless be grateful.

M. F. BOERGESEN has begun the publication in *Jour. de Botanique* (Jan. 1) of a paper on the leaves of Arctic plants. The present number contains an account of the epidermis, including the stomata and the transpiration tissues. A large list of Arctic plants has been examined

and the results are stated as follows: (1) Most arctic plants possess stomata on both leaf surfaces, the greater number being on the upper surface; (2) the stomata are situated even with the surface of the leaf; (3) the mesophyll (transpiration tissue) is a very porous structure.

IN 1892 Dr. Ignatio Urban began the publication of "Additamenta ad cognitionem florae Indiae occidentalis," in Engler's *Botan. Jahrb.* The second contribution ("Particula II") of the series has just now appeared (l. c. 19: 80-199), dealing exclusively with the great and perplexing tropical family *Myrtaceæ*. The amount of synonymy in many of the species is appalling, their great variability having led the earlier students of the family to a large multiplication of species.

ANHALONIUM LEWINII (*Lophophora Williamsii Lewinii* Coulter) is to be reckoned among the poisonous Cactaceæ. Its alkaloid, anhalonin, has been studied by L. Lewin, after whom the species is named. Warm-blooded animals are severely poisoned by a dose of 0.02-0.04^{gm} and killed by 0.16-0.2^{gm} per kilo. The Mexican Indians use a substance they call *peyotl*, or *pellote*, as an intoxicant, and Herr Lewin thinks this cactus furnishes the material. On chemical and structural grounds he would keep *A. Lewinii* distinct from *A. Williamsii*. Besides four other species of Anhalonium, *Mamillaria uberiformis* and *Rhipsalis conferta* have been found to contain poisonous alkaloids.

IN THE *Bull. l'Herb. Boiss.* (Jan.) Ad. Tonduz begins a series of papers upon the botanical features of Costa Rica, the present number containing a photographic reproduction of a forest of "Indian trees." In the same number Edmond Bonnet publishes some letters from Linnaeus and his son to David van Royen, Professor of Botany at Leyden. Linnaeus seems to have had a prodigious correspondence, no less than 163 botanical correspondents having been listed. If he wrote to them all as fully as in the case of the letters before us it is difficult to understand how he found time for investigation. About 400 of his letters are known, but the vast majority seem to have disappeared.

THE HERBARIUM of Mr. Walter Deane, of Cambridge, is one of the most interesting collections in the country. Mr. Deane has confined himself to what may be known as the "Manual" plants. He has not merely tried to make a collection of excellent specimens of the ordinary sort, but he has undertaken, so far as material has been accessible, to represent on his sheets all the various stages of development. As a consequence, his collection has become full of valuable information with reference to the growth of many species. It is a matter for congratulation that Mr. Deane has consented to publish some of the facts which have thus been gotten together in his herbarium.

A SKETCH of Thomas Nuttall, with portrait, appears in *Pop. Sci. Monthly* for March. The large impress he left upon American systematic botany is becoming better recognized than formerly. Not only was he the indefatigable explorer of a new flora, but a man of rare discrimination in the matter of genera and species, of which he is said to have described more than any other writer on American plants, excepting Dr. Gray. He was born in Yorkshire, England, in

1786, became a printer by trade, came to America in 1808, where he resided for thirty-four years, chiefly in Philadelphia and Cambridge (Professor in Harvard College, 1822-1833), taking several extended trips, returned to England in 1841, and died there September 10, 1859.

PARTS III and III 2 of Engler and Prantl's *Die natürlichen Pflanzenfamilien* contain the Araliaceæ by H. Harms, the Jungermaniaceæ akrogynæ (concluded) and Anthocerotaceæ by V. Schiffner, and the Musci (Laubmoose) begun by Carl Müller. Schiffner gives the following summary of the Hepaticæ (up to July 1893): Ricciaceæ, 4 genera, 110 species, of which 3 genera and 28 species are found in Europe; Marchantiaceæ, 22 genera, 165 species, of which 17 genera and 28 species are European; Jungerm.-anakrogynæ, 19 genera, 266 species, of which 12 genera and 34 species are European; Jungerm.-akrogynæ, 116 genera, 3,321 species, of which 53 genera and 232 species are European; Anthocerotaceæ, 3 genera, 103 species, of which 2 genera and 10 species are European.

THE INDIANA Academy of Sciences held its tenth annual meeting at Indianapolis on December 27th and 28th. Of the eighty-nine numbers on the program, thirty-one were botanical subjects, or 35 per cent. The officers elected for 1895 are Mr. A. W. Butler, president, and Mr. John S. Wright, secretary. The Iowa Academy of Sciences held its ninth annual session at Des Moines on the same dates. Of the fifty-five numbers on the program, eleven were botanical, or 20 per cent. It should be noted, however, that three were only to be presented "by title," i. e., were not to be read. The Ohio Academy of Science held its fourth annual meeting at Columbus on December 27th and 28th. Of the fifty-three numbers on the program, nineteen were botanical subjects, or 36 per cent.

THE REPORT of the Gray Herbarium for the year 1893-94 (September to September) contains the following items of general interest. Plants received, 8,787; number of sheets added, 9,675; number of volumes added to library, 231, of pamphlets, 241. The botanical collector for the Herbarium, Mr. Pringle, with two assistants, is exploring Oaxaca, reputed to be the richest region of Mexico botanically. Dr. Robinson and Mr. Schrenk collected for six weeks in Newfoundland, and brought back some very interesting material; collections and library have been card-catalogued; work on the "Synoptical Flora" has about closed the largest gap (*Cruciferae*) left in Dr. Gray's manuscript of the first volume, which is to include *Ranunculaceæ—Leguminosæ*; L. H. Bailey's revision of "Field, Forest and Garden Botany," is announced for January, 1895.

THE INSECT THEORY to account for the disease of potato tubers known as "scab," had been completely overthrown, as every one thought, by the bacterial theory, now fully established as fact. Yet at this late time we are shown by Mr. A. D. Hopkins (Proc. Ent. Soc. Wash. 3: 149) of the West Virginia Experiment Station, that one form of the scab may certainly be produced by a small gnat, about a millimeter long, the larvæ which are the depredators being four times that length. The larvæ eat into the potato wherever the periderm is

injured. The investigator scratched his initials upon a potato tuber and the insects (*Epidapus scabei*) turned the injured surface into a scab mark, in a similar way to Dr. Thaxter's well-known initial-mark test with bacteria (*Oospora scabies*). The distribution of the gnats outside of West Virginia has not yet been ascertained.

MR. O. F. COOK is expected to return to this country in May from his rather extended African sojourn. Mr. Cook is in the employ of the American Colonization Society, and his nominal duties are the foundation of an agricultural and mechanical school to which the Liberian government has donated a tract of 1,000 acres for an experimental farm in the interior of the country. He has, however, sufficient time and freedom in which to make large collections, and will return with much valuable material, especially cryptogams. His first visit to Liberia was in 1891-2. After spending a few months in America, during which he married Miss Alice Carter, known to our readers by her contributions to our pages on the subject of pollination, he returned to his African duties in October, 1893, accompanied by Mrs. Cook. The last rainy season, ending in December, was spent in the Canary islands where he has also made some collections.

PROFESSOR JOHN MACOUN has published in *Trans. Roy. Soc., Canada* (Section IV, 1894) a paper on the forests of Canada and their distribution, with notes on the more interesting species. He speaks very strongly of their ruthless devastation, and gives many unhappy results of this vandalism. The following regions are discussed separately: sub-arctic belt, Prince Edward Island, Nova Scotia and New Brunswick, Quebec, Ontario, Manitoba and the Northwest Territories, Rocky Mountains and British Columbia, Vancouver Island. Some very interesting remarks are made on the distribution of certain species, and the changes observed in those which have an east and west continental distribution. He states that, including Vancouver Island coniferous forest extends from the Pacific to the Atlantic, bounded on the north by the tundra of Alaska and the Barren Grounds of the Dominion, and southerly with a varying border until it meets and intermingles with the poplar forests of the Northwest Territories, and eastward with the deciduous forests of Ontario, etc. He estimates this huge forest belt as containing about a million square miles.

AN EXPLANATION of the appointment of an International Committee on Nomenclature by the Genoa Congress (1892) was given by Ascherson and Engler at the Vienna meeting last September. This paper now comes as a separate from *Oesterr. bot. Zeit.* 45: 27. 1895. A review is given of the recent nomenclature discussion, the unhappy results of various extreme views are pointed out, and the following suggestions are offered for consideration: (1) That the rule for homonyms be recommended for future guidance, and be not made retroactive; (2) that in the generic transfer of a species the original specific name be retained according to the rule; (3) that the year 1753 be the datum-line for priority of both genera and species; (4) that while the principle of priority shall be used in the naming of the species a safe name shall not be replaced by a doubtful one; (5) that in the naming of genera, a name which has been ignored for at least

fifty years shall not replace one which has been in use during that time; (6) that an exception be made to this rule in the case of generic names that have been in use at least fifty years since their restoration.

PROFESSOR L. H. BAILEY, in a recent address before the Biological Society of Washington, discussed the subject of the plant individual in the light of evolution. He suggests the idea that both Lamarckism and Darwinism are true, but that the former finds its expression best in animals and the latter in plants. His chief points, however, are: (1) that the plant is not a simple autonomy, in the sense in which the animal is; (2) that the plant parts are independent in respect to propagation, struggle for existence, and transmission of characters; (3) that there is no essential difference between bud-varieties and seed-varieties; (4) that all these parts are at first sexless, and finally may or may not develop sex; (5) that much of the evolution of the vegetable kingdom is accomplished by wholly sexless means.

Professor Bailey's conception of a plant, therefore, seems to be that it is a colony of potential individuals, each one of which is capable of working out its own independent development under the various influences of environment. If this be true there can be no localization or continuity of a germ plasm in the sense in which these conceptions are applied to animals.

FROM ADVANCE sheets of the Report of the Missouri Botanical Garden we take the following: The financial results for the past year have been very satisfactory considering the depressed condition of trade. The surplus Dec. 31, 1893, amounted to \$40,649.75; \$19,824.18 have been added in 1894, making the total surplus \$60,473.93. No extensive improvements have been made, but the addition of a plant-house 21×97^{ft}, costing about \$2,700.00 and several granitoid ponds for the growing of the *Victoria regia* and other lilies have added greatly to the beauty and attractiveness of the Garden. The fruticetum has been further improved this year by the removal of all of the old and worthless apple trees and grape vines and is to be largely replanted in the spring to carefully selected varieties of fruit. While much remains to be desired, the labeling of the plants of the Garden is being greatly improved each year. The enamel (granite ware) tree labels which were at first tried have not proved satisfactory, and trees of sufficient size are now receiving zinc alloy labels cast with raised letters, affixed by two pins in a vertical line so as to admit of the expansion of the tree during growth. For the smaller plants, celluloid labels, lettered with a special ink, have been employed very largely. The herbarium has been increased by the incorporation of 9,307 sheets of specimens, of which 3,567 sheets were purchased, 126 belonged to the Bernhardt herbarium, and 5,614 were received by donation or exchange. About 1,220 duplicates have been distributed to correspondents by way of exchange. As now constituted, the herbarium contains about 231,527 specimens. The additions to the library consist of 373 books and 166 pamphlets purchased, and 379 books and 999 pamphlets, donated or received by way of exchange. Exclusive of the Sturtevant pre-Linnean collection of about 460 volumes, the library now contains 7,631 books, 9,822 pamphlets, a total of 17,453 works, and 110,000 index cards, exclusive of the author catalogue.